4. (Amended) A nucleic acid molecule according to claim 1 which is a DNA molecule.

6. (Amended) An isolated nucleic acid molecule comprising the sequence illustrated in any of SEQ ID Nos 5, 6, or 7 or the complementary sequence thereof.

8. (Amended) A GFRα-4 receptor encoded by a nucleic acid molecule according to claim 1.

9. (Amended) A DNA expression vector comprising a nucleic acid molecule according to claim 4.

12. (Amended) A host cell according to claim 10 wherein said cell is a mammalian cell.

13. (Amended) A transgenic cell, tissue or organism comprising a transgene capable of expressing a GFRα-4 receptor protein comprising the amino acid sequence illustrated in Sequence ID No's. 8 or 9 or the amino acid sequence of a functional equivalent or bioprecursor thereof.

15. (Amended) A transgenic cell tissue or organism according to claim 14, wherein said transgene comprises a nucleic acid molecule according to claim 1.

16. (Amended) A GFRα-4 receptor protein or a functional equivalent derivative or bioprecursor thereof, expressed by the cell according to claim 10.

18. (Amended) An antisense molecule comprising a nucleic acid which is capable of hybridising to the nucleic acid of claim 1.

19. (Amended) A pharmaceutical composition comprising the molecule according to claim 18.

22. (Amended) A pharmaceutical composition comprising a nucleic acid molecule according to claim 1 together with a pharmaceutically acceptable carrier, diluent or excipient therefor.

23. (Amended) A pharmaceutical composition comprising the receptor according to claim 21 together with a pharmaceutically acceptable carrier, diluent or excipient therefor.

29. (Amended) A method of determining whether a compound is an agonist, antagonist or a ligand in relation to GFRα-4 receptor, according to claim 8, which method comprises contacting a membrane preparation of cells expressing said GFRα-4 with said compound in the presence of cRET or similar protein which interacts with GFRα-4 in the signal transduction pathway of which GFRα4 is a component and monitoring the level of any interaction of GFRα-4 with cRET or said similar protein.

30. (Amended) A method of producing an antagonist or agonist of GFRα-4 comprising the steps of the method of claim 29; and additionally

(i) synthesizing the compound obtained or identified in said method or a physiologically acceptable analog or

derivative thereof in an amount sufficient to provide said antagonist or agonist in a therapeutically effective amount to a patient; and/or

(ii) combining the compound obtained or identified in said method or an analog or derivative thereof with a pharmaceutically acceptable carrier.

31. (Amended) A pharmaceutical composition comprising a compound identifiable as an agonist by the method according to claim 29 together with a pharmaceutically acceptable carrier, diluent or excipient therefor.

32. (Amended) A method of promoting GFRα-4 activation in a mammal comprising administering a therapeutically effective dose of a compound identifiable as an agonist by the method of claim 29.

33. (Amended) A pharmaceutical composition comprising a compound identifiable as an antagonist by the method according to claim 29 together with a pharmaceutically acceptable carrier, diluent or excipient therefor.

34. (Amended) A method of limiting GFRα-4 activation in a mammal comprising administering a therapeutically effective dose of a compound identifiable as an antagonist by the method of claim 29.

36. (Amended) An antibody specific for GFRα-4 receptor protein having an amino acid sequence as illustrated in Sequence ID No's. 8 or 9.

38. (Amended) A method of identifying ligands for a mammalian GFRα-4 receptor protein, which method comprises contacting a receptor encoded by a nucleic acid molecule of claim 1 with a cell extract or a

compound to be tested and isolating any molecules bound to said receptor.

41. (Amended) A compound identifiable as a ligand for GFRα-4 according to the method of claim 40 for use as a medicament.

42. (Amended) The compound of claim 41 wherein the medicament is used in the treatment of neurodegenerative diseases, Alzheimers disease, Parkinsons disease, Motor Neuron Disease, peripheral neuropathy, spinal cord injury, familial hirschsprung disease in addition to carcinoma and diseases associated with GFRα-4 dysfunction.

43. (Amended) A kit for determining whether a compound is an agonist or an antagonist of GFRα-4 receptor protein which kit comprises a cell according to claim 10, means for contacting said cell with said compound and means for monitoring the level of GFRα-4 mediated functional or biological response in said cell.

45. (Amended) A diagnostic kit including a probe which comprises any of, a nucleic acid molecule according to claim 1 or a fragment thereof or an antisense molecule capable of binding to a nucleic acid molecule of claim 1 and means for contacting biological material to be tested with said probe.

46. (Amended) A kit for determining whether a compound is a ligand of a mammalian GFRα-4 receptor protein, which kit comprises a membrane preparation from cells expressing GFRα-4, means for contacting said preparation with said compound in the presence of cRET or a similar protein involved in the signal transduction pathway of which GFRα-4 is a component

and means for measuring any interaction between GFRα-4 and cRET or said similar protein.

Kindly add the following claims:

47. An isolated nucleotide acid molecule of at least 15 consecutive nucleotides in length from SEQ ID Nos 5-7.

48. The method of claim 32 wherein the method is used to treat neurodegenerative diseases, Alzheimers disease, Parkinsons disease, Motor Neuron Disease, peripheral neuropathy, spinal cord injury, familial hirschsprung disease, carcinomas and diseases associated with GFRα4 receptor dysfunction.

49. The method of claim 34 wherein the method is used to treat carcinomas or in alleviating pain.

REMARKS

Claims 7, 20, 24-28, 35 have been canceled. New claims 47-49 have been added and claims 1, 4, 6, 9, 12, 13, 15, 16, 18, 19, 22, 23, 29-34, 36, 38, 40, 41, 42, 43, 45, and 46 have been amended to better align them with U.S. Patent practice. The specification has been amended to incorporate the priority information for this Application and to include headings. A substitute sequence listing has been provided along with a Computer Readable Form of the Sequence Listing. The undersigned hereby states that the Paper Copy and the Computer Readable Form are identical. No new matter has been added by these amendments. A version to show changes made accompanies this amendment. Favorable consideration of the remarks provided below is respectfully requested. Should the Examiner have any